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Claims

1. Network device for a device network, **characterized by**
 - a content detection layer (24, 43) for detecting the content type of external traffic received by said network device, and for passing said external traffic, in dependence of the detected content type, to a content-specific convergence layer (25, 26, 44, 45) dedicated to handling the respective content type, and
 - a set of content-specific convergence layers (25, 26, 44, 45), which exchange network traffic with other network devices (28, 29) of said device network (21) via content-specific connections, whereby said content-specific connections are suited to the requirements of the respective content type.
2. Network device according to claim 1, **characterized in that** one of said content types is real-time critical data, whereby said set of content-specific convergence layers comprises a convergence layer dedicated to handling real-time critical data.
3. Network device according to claim 1 or 2, **characterized in that** one of said content types is packet-based data, whereby said set of content-specific convergence layers comprises a convergence layer dedicated to handling packet-based data.
4. Network device according to anyone of the preceding claims, **characterized in that** said external traffic being at least one of Ethernet traffic, IEEE 1394 traffic, UMTS traffic or PPP traffic.
5. Network device according to anyone of the preceding claims, **characterized in that** said network device comprises hardware connectivity for at least one of one of Ethernet traffic, IEEE 1394 traffic, UMTS traffic or PPP traffic.
6. Network device according to anyone of the preceding claims, **characterized in that** said network device is an access point of said device network.

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1 7. Network device according to anyone of the preceding claims, **characterized in that** said content detection layer analyses if said Ethernet traffic is real-time critical traffic, whereby in case said Ethernet traffic is real-time critical, it is passed to a convergence layer dedicated to handling
5 real-time critical data.

8. Network device according to anyone of the preceding claims, **characterized in that** said content detection layer analyses if said Ethernet traffic is not real-time critical traffic, whereby in case said Ethernet traffic is
10 not real-time critical, it is passed to a convergence layer dedicated to handling packet-based data.

9. Network device according to anyone of the preceding claims, **characterized in that** said content detection layer analyses if said IEEE 1394 traffic is packet-based data traffic, whereby in case said IEEE 1394 traffic is packet-based data traffic, it is passed to a convergence layer dedicated to handling packet-based data.
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10. Network device according to anyone of the preceding claims, **characterized in that** said content detection layer analyses if said IEEE 1394 traffic is real-time critical data traffic, whereby in case said IEEE 1394 traffic is real-time critical data traffic, it is passed to a convergence layer dedicated to handling real-time critical data.
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25 11. Network device according to anyone of the preceding claims, **characterized in that** said content-specific convergence layers comprise a common part, which segments data packets of said external traffic into a multitude of corresponding data packets of said device network's internal protocol, and which reassembles data packets of said device network's internal protocol into corresponding data packets of the respective external
30 traffic.

12. Network device according to anyone of the preceding claims, **characterized in that** said content-specific convergence layers are operable to be
35 used simultaneously within the same device network.

13. Device network, comprising at least one network device according to

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1 anyone of claims 1 to 12.

14. Device network according to claim 13, **characterized in that** content-specific connections are set up and released between the network devices of said device network, whereby a content-specific connection is set up between a content-specific convergence layer of a first network device which supports a certain content type, and a respective content-specific convergence layer of a second network device which supports the same content type.

10 15. Device network according to claim 13 or 14, **characterized in that** the external traffic exchanged with said content-specific convergence layer of said first network device may be of a different kind than the external traffic exchanged with said content-specific convergence layer of said second network device.

16. Device network according to anyone of claims 13 to 15, **characterized in that** in case said content-specific connection is for a content type which requires a quality of service feature, a fixed bandwidth is reserved for said content-specific connection.

17. Device network according to anyone of claims 13 to 16, **characterized in that** for each content-specific connection, the content type supported by said content-specific connection is registered.

25 18. Device network according to anyone of claims 13 to 17, **characterized in that** said device network is a wireless local area network (WLAN), and in particular a HiperLAN/2 network.

30 19. Device network according to anyone of claims 13 to 18, **characterized in that** the exchange of control messages and data packets between different network devices of said device network is effected according to a TDMA transmission scheme.

35 20. Device network according to claim 19, **characterized in that** a set of time slots of said TDMA transmission scheme may be reserved for a certain content-specific connection.

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- 1 21. Method for transmitting data traffic via a device network, **characteri-**
 zed by the following steps:
- detecting a content type of external traffic arriving at the device network,
 - passing said external traffic, in dependence of the detected content type,
 - 5 to a content-specific convergence layer (25, 26, 44, 45) dedicated to hand-
 ling the respective content type, and
 - transmitting network traffic to other network devices (28, 29) via content-
 specific connections, whereby said content-specific connections are suited
 to the requirements of the respective content type.
- 10 22. Method according to claim 21, **characterized in that** content-specific
 connections are set up between two network devices before transmitting
 said network traffic between said two network devices in accordance with
 said content type.
- 15 23. Method according to claim 21 or 22, **characterized in that** after the
 network traffic between said two network devices has been transmitted in
 accordance with said content type, said content-specific connection betwe-
 en said two network devices is released.
- 20 24. Computer program product comprising computer program means ad-
 apted to perform the method steps as defined in anyone of claims 21 to 23
 when being executed on a computer, a digital signal processor or the like.
- 25 25. Computer readable storage means, storing thereon a computer pro-
 gram product according to claim 24.
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